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piece 1, NC\_000913, rihC\_dapB-, config: linear, direction: -, begin: 28403, end: 28188

Sequence alignment of nine bacterial genes (28400, 28390, 28380, 28370, 28360, 28350, 28340, 28330, 28330) showing their amino acid translations. The alignment highlights identical amino acids in green, conservative substitutions in blue, and non-conservative substitutions in red. Amino acid changes are marked with dots above the sequence. A red circle highlights a specific change at position 28330.

Diagram illustrating the genetic organization of the *rihC-dapB* locus. The *rihC* gene (red) is preceded by a sigma-70 promoter (*sd*, green). The *dapB* gene (blue) is preceded by an *ir* site (light blue). A gap of 28379 bp separates the two genes. The *rihC* promoter is located upstream of the *dapB* promoter.

|-----| sd-ir 28379 ribC danB- total 5.1 bits

p35 6.2 bits

p10 0.7 bits

## 4.4 bits

|-----| sd-ir 28379 rihC\_dapB- total 5.1 bits

p35 6.2 bits

{ } p35-(23)-p10 28362 Gap 1.4 bits  
p35-p10 28362 total 5.4 bits

{ } p35-(24)-p10 28361 Gap 2.4 bits  
p35-p10 28361 total 4.4 bits

p35 3.1 bits

{ } p35-(22)-p10 28356 Gap 2.3 bits  
p35-p10 28356 total 5.2 bits

Diagram illustrating the 28S rRNA gene structure and codon assignments. The gene is shown as a horizontal line with various restriction sites marked by asterisks (\*). Codons are color-coded by amino acid: Ile (blue), Ala (green), Thr (red), Pro (orange), Lys (purple), Asn (pink), Asp (yellow), Glu (cyan), Arg (dark green), Gly (light blue), Tyr (brown), and Ser (light green). The 5' and 3' ends are indicated at the top. A red arrow points to the 31 codons of ORF 31.

[###> orf 31 codons

sd-(11)-ir 28257 Gap 3.0 bits  
 sd-ir 28257 rihc daaB- total 7.0 bits

r 28257 Gap 3.0 bits  
57 ribC dapB- total 7.0 bits

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{----- ... sd-(10)-ir 28240 Gap  
----- ... sd-ir 28240 rihC dapB- to
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The diagram illustrates the gene structure of *rihC\_dapB-*. It shows two overlapping genes: *rihC* (red) and *dapB* (green). The *rihC* gene has a transcription start site at position \*28240, indicated by a red arrow pointing down. The *dapB* gene has a transcription start site at position \*28230, indicated by a green arrow pointing down. Both genes have poly-A tails at their 3' ends. The *rihC* gene contains three codons (TGA, TGT, TGC) highlighted in red, which are part of the *orf 7* label. The *dapB* gene contains several codons highlighted in green. The reading frames are indicated by horizontal arrows above the sequence. Several fMet codons (ATG) are marked with red circles. The sequence is flanked by restriction enzyme sites (PstI, KpnI, SacI, SphI, BpuMI, HinfI, SalI, XbaI, PstI) and a ribozyme motif (UUCAGA) is shown in blue. The 5' and 3' ends are labeled. A reference sequence NC\_000913.rih is indicated at the bottom right.

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... --{ sd-(10)-ir 28240 Gap 2.7 bits  
... --| sd-ir 28240 rihC_dapB- total 7.6 bits
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